Q. **PLEASE STATE YOUR NAME, BUSINESS ADDRESS, OCCUPATION, AND AREAS OF SPECIAL EXPERTISE.**

A. My name is Burton G. Malkiel and my business address is Bendheim Center for Finance, 26 Prospect Avenue, Princeton University, Princeton, N.J. 08544-1021. I am Chemical Bank Chairman's Professor of Economics at Princeton University. My special fields of research, writing, teaching and expertise are financial markets, corporate finance and investments.

Q. **PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.**

A. I received my B.A. degree in Economics from Harvard University in 1953. In 1955, I received a Masters of Business Administration from the Harvard Graduate School of Business Administration with a major in Finance. After serving as an officer in the United States Army Finance Corps and after some years as a trader in equity securities and as an investment banker with Smith, Barney and Company in New York, I received my Ph.D. from Princeton University in 1964 in Economics and Finance.

1   From 1964 to 1981, I was a professor of Economics at Princeton. I was the

2   Director of the Financial Research Center at Princeton from 1966 to 1981. From

3   1975 to 1977, I served as a member of the Council of Economic Advisors under the

4   administration of President Gerald R. Ford. From 1969 to 1981, I was also the

5   Gordon S. Rentschler Professor of Economics at Princeton.

6   I am currently the Chemical Bank Chairman's Professor of Economics at

7   Princeton University. Prior to my appointment to this chair, I was the Dean at the

8   Yale University School of Management from 1981 to 1987. During my tenure as

9   Dean of the School of Management, I was concurrently the William S. Beinecke

10   Professor of Management at Yale.

11

12   **Q.   DO YOU SERVE ON ANY BOARDS OR COMMITTEES?**

13   A.   I am currently the Chairman of the New Products Committee of the American

14   Stock Exchange.

15   I also serve on the Boards of Directors of the following organizations:

16   !   CareGain Corporation (a health services company)

17   !   Active Index Advisors (a financial services company)

18   !   The Vanguard Group of Investment Companies (a mutual fund

19   company)

20   !   BKF Capital Corporation (an investment advisory firm)

21   !   The Jeffrey Company (an investment advisory firm)

2

1   As a Director, I am actively involved in advising these companies regarding

2   the investment returns that can be achieved from alternative equity and debt

3   securities. The Vanguard Group of Investment Companies manages over $750 billion

4   of investment funds including the largest equity mutual fund in the world with assets

5   close to $100 billion.

6   For 25 years I served on the board of Prudential Financial Corporation and

7   have chaired their Finance Committee (supervising the capital investments made by

8   Prudential on behalf of the company) and their Investment Committee (supervising

9   financial investments made by the company). With assets under management of

10   approximately $600 billion, Prudential is one of the largest financial intermediaries in

11   the world and is actively involved in purchasing and valuing equity securities.

12

13 **Q. PLEASE OUTLINE YOUR WRITINGS WHICH ADDRESS CAPITAL**

14   **MARKETS AND INVESTMENTS.**

15 A.   I have published widely in the field of finance, the valuation of stocks and

16   bonds, and the operation of the financial markets of the United States. My curriculum

17   vitae, attached as Exhibit No. __ (BGM-1), names the publications and articles that I

18   have authored as well as lists, in detail, my other professional accomplishments,

19   distinctions, and professional associations. My best known book, *A Random Walk*

20   *Down Wall Street,* presents an in-depth analysis of the investment characteristics and

21   valuation of stocks and bonds. In January of 2004, the 8th (paperback) edition of that

1   book was published and remains in circulation today. One important area of my

2   academic research has concerned how securities prices are significantly determined

3   by the expectations of Wall Street securities analysts.

4

5   **Q.**   **DO YOU CONSULT WITH INDIVIDUALS AND CORPORATIONS?**

6   A.   I have served as a consultant to various companies and government agencies

7   including:

8   !   Bear, Stearns & Company

9   !   Board of Governors of the Federal Reserve System

10   !   Emerging Communications, Inc.

11   !   Federal Reserve Bank of New York

12   !   Indianapolis Power and Light Company

13   !   Microsoft Corporation

14   !   Morgan Stanley & Company (now Morgan Stanley Dean Witter)

15   !   New York State Teachers

16   !   Pension Benefit Guaranty Corporation

17   !   Pepsico

18   !   Price Waterhouse (now Pricewaterhouse Coopers)

19   !   Proctor & Gamble

20   !   U.S. Department of Labor

21   !   U.S. Securities and Exchange Commission

1   !   Walt Disney Company

2

3   **Q.   PLEASE DISCUSS THE BASIS FOR YOUR OPINIONS IN THIS CASE.**

4   A.   I am qualified to offer the opinions expressed herein based on my studies,

5   research, teaching and writing in the field of finance. In addition, I base my opinions

6   on my experience as an investment banker and trader in common stocks, my position

7   with the American Stock Exchange, my experience as advisor to corporate boards of

8   directors with whom I have consulted or with whom I have served as a director and,

9   in particular, on my service on the Investment and Finance Committees of Prudential

10   Financial Corporation and on the Board of Vanguard, where we oversee the

11   management of the equity mutual funds in the Vanguard family of funds.

12   I have frequently been asked to consult and testify on matters concerning the

13   cost of capital for corporations. I have been employed in the past by American

14   Telephone and Telegraph, Southwestern Bell, The Association of American

15   Railroads, and Mountain States Telephone and Telegraph. I have written extensively

16   on matters concerning the cost of capital, including The Debt-Equity Combination of

17   the Firm and the Cost of Capital, Library of Congress Catalog Card No. 75-167962.

18   My opinions expressed herein are based on my analyses of the relevant

19   materials I and those under my supervision have reviewed to date coupled with my

20   years of teaching, writing, researching, consulting, and lecturing in the fields of

21   corporate finance, financial markets and investments. I may supplement, refine, or

1   revise my analyses as appropriate based on additional testimony, documents, or other

2   materials that may become available.

3

4 **Q.   WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

5 A.   The purpose of my testimony is to express expert opinions on how the cost of

6   capital should be estimated. Specifically, on behalf of South Carolina Electric and

7   Gas Co. ("SCE&G"), my services were engaged to provide advice, counsel and

8   expert testimony on the following subjects:

9   1.   The cost of equity capital for SCE&G.

10   2.   The reasonableness of SCE&G's capital structure.

11   3.   The overall fair rate of return for SCE&G.

12

13 **Q.   WHAT KEY DOCUMENTS AND OTHER MATERIALS DID YOU**

14   **CONSIDER IN REACHING YOUR OPINIONS?**

15 A.   The key materials used by me in my analysis are as follows:

16   •   Annual reports of SCANA Corporation ("SCANA") and various

17   financial/business reports issued on SCANA during the past two

18   to three years.

19   •   Various brokerage reports on electric and gas companies.

1   •   Prepared Direct Testimony of Thomas R. Osborne, Managing

2   Director in the Global Power Group of UBS Investment Bank,

3   filed on behalf of SCE&G.

4   •   Expectations of security analysts as reported by I/B/E/S, the

5   Institutional Brokerage Estimate Service and First Call (services

6   compiling growth rate estimates of security analysts).

7

8 **Q.**   **ARE THERE ESSENTIAL STANDARDS THAT APPLY IN SETTING**

9   **PUBLIC UTILITIES' ALLOWED RATES OF RETURN?**

10 A.   Below I list the essential standards that apply in setting public utilities' allowed

11 rates of return. These standards emanate from the *Bluefield*[1] and *Hope*[2] decisions of

12 the United States Supreme Court. First, a utility should be allowed the opportunity to

13 realize earnings at a sufficient level so that it is able to attract capital at reasonable

14 cost. Second, a utility should be allowed the opportunity to realize earnings at a level

15 comparable to firms facing equivalent risk.

---

[1]   Bluefield v. Public Service Commission, et.al., 262 U.S. 679, 43 S.Ct. 675, 67 L.Ed. 1176, 1923 U.S. LEXIS 2676 (1923).

[2]   Federal Power Commission, et.al. v. Hope Natural Gas Co., 320 U.S. 591, 64 S.Ct. 281, 88 L.Ed. 333, 1944 LEXIS 1204 (1944).

1   **Q.**   **WHAT FINANCE PRINCIPLES ARE IMPORTANT WHEN ESTIMATING**

2   **THE COST OF EQUITY CAPITAL FOR A COMPANY?**

3   A.   In the entire field of the economics of finance, the two most universally

4   accepted principles when estimating the cost of capital for a firm are the following:

5   a)   A firm should undertake new investments in plant and equipment only

6   if the prospective return from these investments is at least equal to its

7   cost of capital funds.

8   b)   Risk and return are related. Investors must be compensated for

9   investing in a company with higher than average risk by the promise of

10   higher than average return.

11   Both of these principles will play a key role in my testimony.

12

13   **Q.**   **PLEASE EXPLAIN.**

14   A.   The proposition that a firm should undertake investment decisions only if they

15   are equal to or greater than its cost of capital funds is a fundamental tenet of

16   corporation finance. A simple illustration, using an all-equity company, will help

17   demonstrate the validity of the principle. Suppose XYZ Company has $1,000 of

18   invested capital on which it earns $100 per year. Let us suppose in this basic

19   illustration that depreciation charges are sufficient to provide funds to maintain the

20   invested capital intact, and that the $100 can all be paid out to shareholders in

21   dividends each year, in perpetuity. Assuming that the market values XYZ Company

1	at $1,000 (market and book values are identical in this case), shareholders will receive
2	an annual return (yield) of 10 percent. (The $100 in constant dividends divided by
3	the $1,000 market value.) Thus, the shares are priced in the market to provide
4	investors with a 10 percent annual return. This market determined return is both the
5	anticipated rate of return to an investor in the company's shares and also the
6	appropriate cost of capital for the firm. If the company is being run in the interests of
7	the shareowners, no investment should be undertaken that yields less than the cost of
8	capital, because such an undertaking will make the shareholders worse off.
9	Investments that yield more than (the same as) the cost of capital will make the
10	shareholders better off (just as well off as before).
11	Suppose, for example, XYZ Company wanted to invest $1,000 to double the
12	size of its plant and sold $1,000 of new equity to accomplish the investment. If the
13	new plant produced an extra return of $90/year (9 percent) total, yearly earnings for
14	XYZ Company would rise from $100 to $190. But if the general risk category of
15	XYZ Company was unchanged, as it would be if the new investment was of the same
16	type as the existing plant, then earnings of XYZ Company would continue to be
17	capitalized at 10 percent, producing a total market value of $1,900 ($190 times 10).
18	Note that this is less than the total amount of the original equity ($1,000) plus the
19	$1,000 of new equity sold. It follows that the shareholders were made worse off by
20	undertaking an investment that produced a rate of return less than the cost of capital.
21	If the new plant produced a yield of 11 percent, however, then $110 of new earning

9

1   would be produced and the total value of the equity would rise to $2,100 ($210 times

2   10) and the shareholders would be better off. If an investment were undertaken that

3   yielded the same as the cost of capital (i.e., 10 percent), the shareowners would be

4   just as well off as before. This is why the cost of capital is often referred to as the

5   cut-off rate for judging new investments. No investment should be undertaken that

6   yields less than the cut-off cost of capital rate.

7   Another wholly equivalent way to look at the cost of capital is as an

8   "opportunity cost" rate. One alternative always open to the firm is the purchase of its

9   own shares or the shares of firms in an equivalent risk category, which can be

10   expected to provide the same (10 percent) rate of return. Thus, it would make no

11   sense for the firm to accept a project that yielded less than the "opportunity cost" of

12   investing funds in common stocks at the rate set by the market for similar risk

13   investments.

14

15   **Q.   IS THE ANALYSIS THE SAME FOR BOTH REGULATED AND**

16   **UNREGULATED FIRMS?**

17   A.   The cost of capital standard is no less applicable for regulated than for

18   unregulated companies. Since both kinds of companies must raise capital in a

19   competitive securities market, the regulated company can have no different cut-off

20   rate for investments than the unregulated company. Only if the regulated company

1   can earn the cost of capital rate on the investments it makes can the common

2   stockholders be assured of earning a competitive rate of return.

3   Should SCE&G not be allowed to earn the cost of capital rate, investments

4   needed to maintain, modernize, and expand the system will not be made by a

5   management interested in the welfare of its common stockholders. This would lead

6   to poor service for the customers served. Failure to earn the cost of capital on invested

7   funds will also lead to an inability to raise new capital in a freely competitive capital

8   market. Thus, even if the management wished to make the necessary investments in

9   the system, SCE&G will not be able to attract the necessary capital to do so since

10   investors would correctly anticipate that failure to earn the cost of capital rate on its

11   investment base would lead to a fall in the price of SCE&G's securities.

12

13   **Q.   HOW IS THE COST OF CAPITAL DETERMINED?**

14   A.   While the principle is universally accepted that a firm should use the cost of

15   capital as the cut-off rate for investment projects, the actual measurement of capital

16   costs necessarily involves a considerable degree of judgment. Current debt costs (the

17   return to bond investors) can be measured easily since debt involves fixed-interest

18   payments as well as a fixed date for the repayment of principal. The more difficult

19   estimates concern the equity cost of capital. The equity cost of capital involves

20   finding the expected return to equity investors. But since the future earnings, and

21   thus expected dividend payments, can only be estimated, the measurement of the

11

1   equity cost of capital is more difficult. The usual methods employed to estimate the

2   cost of equity capital utilize the discounted cash flow principle.

3

4   **Q.   PLEASE DESCRIBE HOW THE DISCOUNTED CASH FLOW METHOD**

5   **WORKS.**

6   A.   The most direct method of estimating the equity cost of capital is to project the

7   future stream of earnings (and dividends) for the firm and then to find the discount

8   rate (yield rate) that equates the present (or discounted) value of the dividends to the

9   current market price of the shares. Consider the following two-period example:

10   invest $100 today and receive $120 one year from today. We form the following

11   equation: Investment Today X Unity plus the interest (yield) rate = Repayment in

12   one year.

13   $$Investment\ Today = \frac{Repayment\ in\ one\ year}{Unity\ plus\ the\ interest\ (yield)\ rate}$$

14

15   $$\$100 = \frac{\$120}{1+r},\ where\ r\ is\ the\ interest\ or\ yield\ rate.$$

16   Solving the equation, we find that $r = .20$, or 20 percent.

17   Moneys to be received in two years are discounted by $(1 + r)$ times $(1 + r)$ or by

18   $(1+r)^2$, in three years by $(1+r)^3$, and so forth. The method then is to project future

19   returns to the equity investor and then find the discount or yield rate that makes the

20   present (discounted) value of those returns equal to the market price of the shares.

12

1	In the illustration above, XYZ Company had a market value of $1,000 and

2	promised a perpetual stream of dividends equal to $100. Thus, we form the equation:

3
$$\$1000 = \frac{\$100}{1+r} + \frac{\$100}{(1+r)^2} + \frac{\$100}{(1+r)^3} + ... + \frac{\$100}{(1+r)^n}$$

4	The solution to this equation (n going to infinity) is r = .10 (10 percent). The rate of

5	return in this no growth case is simply the earnings/price, which in this case equals

6	the dividends price ratio.

7	Normally, however, dividend payments can be expected to grow over time.

8	Assuming a constant growth rate, and assuming that dividends are paid annually at

9	the end of the year, we may write:

10
$$P = \frac{D_0(1+g)}{(1+r)} + \frac{D_0(1+g)^2}{(1+r)^2} + ... + \frac{D_0(1+g)^N}{(1+r)^N}, \text{ where}$$

11	P = the market prices of the shares,

12	D_0 = the dividend paid in the preceding year,

13	g = the (constant) growth rate of the dividend, and

14	r = the discount rate.

15	Allowing n, the number of periods, to go to infinity, the solution of this

16	equation takes the form:

17
$$r = \frac{D_0(1+g)}{P} + g$$

18	The rate of return to investors from buying the shares at price P is simply the

19	dividend yield (based on the dividend expected for the next year) plus the expected

1 long-term growth rate of dividends. Note that it is the expected dividend yield rather

2 than the current dividend yield that is the first term in the equation. Thus, the cost of

3 equity capital can be estimated as the sum of the dividend yield and the expected

4 growth rate. This formula holds not only for dividend growth at a constant long-term

5 rate, but also shorter-term dividend growth as long as the price-earnings ratio of the

6 shares is the same at the end of the period as it is at the beginning. This model is

7 often referred to as the "Gordon Model" after Professor Myron Gordon of the

8 University of Toronto, who popularized the model, and this model is now regularly

9 taught in business schools and economics departments around the world.

10   It is possible to write other formulas where dividend growth proceeds at

11 different rates from period to period, or where the price-earnings ratio of the shares is

12 assumed to change over time. The principle is always the same, however. The

13 estimation of the cost of equity capital involves fundamentally a projection of

14 earnings and dividend growth and solving for the rate of return. While it is possible

15 to estimate future growth by simply extrapolating using historical growth rates, it is

16 preferable to use the forecasts of Wall Street security analysts for long-run growth.

17 My own empirical work found that market price-earnings multiples are more closely

18 related to expected growth rates than they are to extrapolations of past growth.[3] All

---

3   For an analysis of these results done on a sample of public utility equities, see Burton G. Malkiel, "The Valuation of Public Utility Equities," The Bell Journal of Economics and Management Sciences, Vol. 1, No. 1, Spring 1970. See also John Cragg and Burton G. Malkiel, Expectations and the Structure of Share Prices, (University of Chicago Press, 1982) for results done on a larger sample of companies.

1 leading textbooks in finance support the use of the technique described above to

2 estimate the equity cost of capital.

3 One problem with the Gordon model is that it can produce unrealistically high

4 estimates of the return on equity when forecasted growth rates are very high. The

5 problem is that it is not realistic to project very high rates of growth (well above the

6 growth rate of Gross Domestic Product) (GDP) for long periods of time. The life

7 cycle of companies is typically that the very high rates of growth that characterize the

8 early period in a firm's history typically decline in later periods if for no other reason

9 than the fact that very high growth rates of sales and earnings are much harder to

10 achieve on a larger base. Thus, one would not use the Gordon Model to estimate the

11 required rate of return for a rapid-growth stock such as eBay.

12 In general, however, the Gordon model does work well for public utilities

13 where forecasted growth rates are generally in the vicinity of the growth rate for

14 GDP. Historical growth rates for nominal GDP have generally been in the vicinity of

15 six to seven percent. Some analysts believe that future long term GDP growth rates

16 could exceed seven percent if recent excellent productivity results continue for the

17 economy in general. My own experience and study supports the view that future

18 GDP growth rates could exceed seven percent; consequently, I am of the opinion that

19 high single digit forecast rates from earnings and dividend growth are reasonably

20 consistent with overall economic growth. Based upon these factors, I believe that the

1   Gordon model is well suited for estimating capital costs in this case, and, therefore, I

2   will use the Gordon model as the basis for my equity cost of capital estimates.

3

4 **Q.   WHAT PART DOES RISK PLAY IN APPLYING THIS METHODOLOGY?**

5 A.   Risk plays an important role in applying this methodology. As mentioned

6   above, a tenet of modern finance is that risk and return are related. Higher rates of

7   return are required to induce investors to hold risky assets. Exhibit No. __ (BGM-2)

8   presents data from Ibbotson Associates showing historical returns for various assets

9   since 1926. We note that stocks of large companies have generated returns of 10.4

10   percent per year while stocks of smaller (and thus considered riskier) companies have

11   returned more than 12 ½ percent. This compares with returns of 5.9 percent for safer

12   corporate bonds and 5.4 percent for default-free long-term U.S. Treasury bonds. On

13   average, the companies considered comparable to SCE&G must have a risk level that

14   is approximately the same.

15

16 **Q.   HOW DID YOU APPLY THE DISCOUNTED CASH FLOW**

17   **METHODOLOGY TO ESTIMATE THE COST OF EQUITY CAPITAL IN**

18   **THIS CASE?**

19 A.   I applied the discounted cash flow methodology to estimate the cost of equity

20   capital in this case in the following manner: Were SCE&G a stand-alone company

21   whose stock was traded in the public market, we could estimate its cost of equity

1   capital directly using the dividend plus growth methodology described above. But

2   SCE&G is a subsidiary of a larger company, SCANA; hence, we need to find

3   comparable companies of roughly the same size and risk class and facing the same

4   kind of competition.

5   Unfortunately, there are no perfectly comparable companies to SCE&G. What

6   we can do, however, is show the range of expected total return (cost of equity capital)

7   numbers for a wide variety of electric and gas companies and other similar-sized

8   companies that are roughly comparable to SCE&G. Moreover, we can test the

9   reasonableness of the expectations by examining estimates of the required rate of

10   return for a variety of utility companies subject to similar kinds of regulation

11   environments.

12   In order to obtain a sample of comparable utilities, I asked Thomas R.

13   Osborne, Managing Director of the Global Power Group of UBS Investment Bank to

14   obtain such a list for me. The companies he chose, which I agree are in fact

15   comparable, are listed below in Table 1.

1

Table 1

2
3
4

Osborne Sample of Companies Comparable to
South Carolina Electric and Gas

Company Name	Ticker Symbol	Equity Market Value[1] ($mm)
Energy East	EAS	3,504
NSTAR	NST	2,502
Pinnacle West Capital Corp.	PNW	3,672
Vectren Corp.	VVC	1,877
Wisconsin Energy	WEC	3,813
WPS Resources	WPS	1,718

5

6   [1] As of 07/01/04

7   Source: Thomas R. Osborne, UBS Investment Bank

8

9 **Q.   PLEASE DISCUSS THE ESTIMATES FOR A SAMPLE OF COMPARABLE**

10   **COMPANIES.**

11 A.   I believe we can obtain a reasonable estimate of the required equity rate of

12 return for SCE&G by examining a group of companies in similar business and with

13 similar regulatory oversight and risk levels. I therefore used the so-called Gordon

14 model to derive equity cost of capital estimates for the Osborne sample of comparable

15 public utilities. The estimates are presented in Table 2 below.

1 **Table 2**

2 Estimated Required Equity Rate of Return
3 Osborne Comparables
4

| Company Name | Symbol | Share Price ($) | Shares Outstanding (mm) | Equity Market Value ($mm) | Indicated Annual Dividend ($) | Dividend Yield (%) | Long-term EPS Growth | | | D(1+g) P | Estimated Required Rate of Return (%) | Estimated Required Rate of Return Including 4.25% Flotation Costs (%) |
							I/B/E/S (%)	FirstCall (%)	Average (%)			
Energy East	EAS	23.92	146	3,504	1.04	4.3	4.5	4.5	4.5	4.5	9.0	9.4
NSTAR	NST	47.17	53	2,502	2.22	4.7	4.3	4.3	4.3	4.9	9.2	9.6
Pinnacle West Capital Corporation	PNW	40.19	91	3,672	1.80	4.5	4.6	4.6	4.6	4.7	9.3	9.7
Vectren Corp	VVC	24.74	76	1,877	1.14	4.6	7.0	7.0	7.0	4.9	11.9	12.4
Wisconsin Energy	WEC	32.25	118	3,813	0.84	2.6	6.3	6.8	6.6	2.8	9.3	9.7
WPS Resources	WPS	46.29	37	1,718	2.18	4.7	6.4	6.4	6.4	5.0	11.4	11.9
				Mean		4.2	5.5	5.6	5.6	4.5	10.0	10.5

Source: Bloomberg, FactSet, FirstCall, I/B/E/S, and SEC Filings
       Thomas R. Osborne, UBS Investment Bank
* As of 07/01/04

5

6   Note from Table 2 that my cost of equity capital estimates including flotation

7 costs (to be discussed below) for the Osborne comparable set of energy utilities

8 average 10.5 percent.

9

10 **Q.   DID YOU DO ANY CHECK OF THE REASONABLENESS OF YOUR COST**

11 **OF EQUITY CAPITAL ESTIMATE FOR THE OSBORNE SAMPLE?**

12 A.   As a check of the reasonableness of my estimate of the cost of equity capital

13 for the Osborne set of comparable companies, I did a similar analysis for the set of

14 much larger gas and electric utilities as well as for the three major telephone utilities

15 shown in Tables 3 and 4 below.

19

1

Table 3

2
3

Estimated Required Equity Rate of Return
Large Utility Companies

4
5

Company Name	Symbol	Share Price ($)	Shares Outstanding (mm)	Equity Market Value ($mm)	Indicated Annual Dividend ($)	Dividend Yield (%)	Long-term EPS Growth I/B/E/S (%)	FirstCall (%)	Average (%)	D(1+g) P	Estimated Required Rate of Return (%)	Estimated Required Rate of Return Including 4.25% Flotation Costs (%)
Dominion Resources	D	62.25	327	20,327	2.58	4.1	6.0	6.0	6.0	4.4	10.4	10.8
Duke Energy	DUK	20.11	915	18,398	1.10	5.5	4.3	4.3	4.3	5.7	10.0	10.4
FPL Group	FPL	63.04	185	11,651	2.48	3.9	4.5	4.5	4.5	4.1	8.6	9.0
Progress Energy	PGN	43.58	247	10,746	2.30	5.3	3.3	3.0	3.1	5.4	8.6	8.9
Southern Company	SO	28.86	737	21,283	1.40	4.9	4.6	4.6	4.6	5.1	9.7	10.1
					Mean	4.7	4.5	4.5	4.5	4.9	9.4	9.9

Source: Bloomberg, FactSet, FirstCall, I/B/E/S, and SEC Filings
   Thomas R. Osborne, UBS Investment Bank
* As of 07/01/04

6

7

Table 4

8
9

Estimated Required Equity Rate of Return
Large Telephone Companies

10

Company Name	Symbol	Share Price ($)	Shares Outstanding (mm)	Equity Market Value ($mm)	Indicated Annual Dividend ($)	Dividend Yield (%)	Long-term EPS Growth I/B/E/S (%)	FirstCall (%)	Average (%)	D(1+g) P	Estimated Required Rate of Return (%)	Estimated Required Rate of Return Including 4.25% Flotation Costs (%)
Verizon	VZ	36.05	2,770	99,870	1.54	4.3	5.5	6.3	5.9	4.5	10.4	10.9
SBC Communications	SBC	24.14	3,312	79,949	1.25	5.2	5.2	3.9	4.5	5.4	10.0	10.4
Bell South	BLS	25.98	1,834	47,657	1.08	4.2	3.9	3.9	3.9	4.3	8.2	8.6
					Mean	4.5	4.9	4.7	4.8	4.8	9.5	9.9

Source: Bloomberg, FactSet, FirstCall, I/B/E/S, and SEC Filings
   Thomas R. Osborne, UBS Investment Bank
* As of 07/01/04

11
12
13   We note that estimates of the required rate of return on equity for this sample

14 of larger utilities is approximately one half of one percentage point lower than is the

15 case for the Osborne sample. This result is what we would expect in view of the data

16 contained in Exhibit No. ___ (BGM-2) that rates of return for smaller companies tend

17 to be higher than is the case for larger companies, reflecting their greater risk level.

1	(Small and less diversified companies are subject to far greater instability and
2	susceptibility to economic shock). Hence, I am of the opinion that the 10.5 percent
3	required rate of return estimate that I have obtained by examining the Osborne group
4	of comparable companies is the minimum reasonable estimate of SCE&G's cost of
5	equity capital as of July 2004.
6	
7	**Q.**	**WHY HAVE YOU MADE AN ADJUSTMENT FOR THE FLOTATION**
8		**COSTS OF ISSUING NEW SECURITIES?**
9	A.	I believe an adjustment should be made so as to accurately measure the cost of
10	equity capital. SCE&G has raised substantial amounts of both equity and debt capital
11	from outside sources over its history. For example, on October 16, 2002, SCANA
12	sold 6,000,000 shares @ $25.10 /share raising $150,600,000. All of the debt capital
13	used for the benefit of SCE&G was also raised from outside sources. While there are
14	no present plans for new equity or debt issues, over time there will be a need for
15	additional outside capital. As SCE&G increases its plant to provide adequate and
16	reliable service to its growing service area, both equity and debt capital will be
17	needed. Moreover, all of the debt will need to be refinanced as it matures. The
18	transactions costs involved in raising equity and debt capital both in the past and in
19	the future can only be recovered if the Commission allows the company to earn each
20	year an additional rate of return reflecting those costs.
21	

1 **Q.** **HOW SHOULD THE COST OF CAPITAL ESTIMATES BE ADJUSTED IN**

2 **THE PRESENCE OF FLOTATION COSTS FOR EXTERNAL FINANCING?**

3 A. Let me return to the illustration I used in pages 8 to 10 above. Recall that

4 XYZ Company had a 10 percent cost of capital, was financed entirely with equity,

5 and was planning to double its capacity by raising $1000 in new equity. We

6 calculated that the cost of capital, 10 percent, was appropriate and that if the new

7 capacity earned $100 per year (10 percent), the stockholders would be just as well off

8 as before. But now suppose that flotation costs (underwriting costs, market price

9 discounts to raise new capital, fees, etc.) were 4 ¼ percent so that if $1000 gross

10 amounts were raised (approximately the cost of the last equity offering), the company

11 would receive a net amount of only $957.50. Note that now the appropriate cut off

12 rate for new investment is not 10 percent but rather 10.44 percent calculated as

13 follows:

14

15 $$\frac{\text{Earnings Needed To Make Stockholders As Well Off As Before}}{\text{Net Amount Raised}} = \frac{\$100}{\$957.50} = 10.44\%$$

16
17 A similar calculation would be required for the debt cost of capital if new debt is to be

18 raised. This is the adjustment for flotation costs that I have used in Tables 2, 3 and 4

19 above.

20

1 **Q. BASED UPON THE ABOVE ANALYSIS, WHAT IS THE APPROPRIATE**

2 **EQUITY COST OF CAPITAL FOR SCE&G?**

3 A.   As Table 2 shows, estimates of the cost of equity capital for the Osborne group

4   of companies comparable to SCE&G is 10.5 percent. The analysis of cost of capital

5   for the much larger gas and electric utilities in Table 3 as well as the three major

6   telephone utilities, BellSouth, SBC and Verizon, in Table 4, which have lower risks

7   than SCE&G, suggests that at least a 10.5 percent rate of return on equity is required

8   for SCE&G. Thus, as of the date of this report, it is my opinion that the cost of equity

9   capital for SCE&G is at least 10.5 percent.

10

11 **Q. IN YOUR TESTIMONY DURING 2002, YOU RECOMMENDED A COST OF**

12 **EQUITY CAPITAL OF 12.5 PERCENT. THE CURRENT ESTIMATE IS**

13 **ONLY 10.5 PERCENT. WHY ARE THE CURRENT ESTIMATES LOWER?**

14 A.   A basic reason is that interest rates are considerably lower. During 2002, the

15   average yield on (riskless) 10-year U.S. Treasury securities was about one percentage

16   point higher than today's 10-year rate. Thus, all returns tend to be lower today than

17   they were two years ago. Table 5 shows an historical analysis of Treasury bond

18   yields over the past 20 years.

Table 5

U.S. 10 Year Treasury Yield (20 Year Historical Data)

3
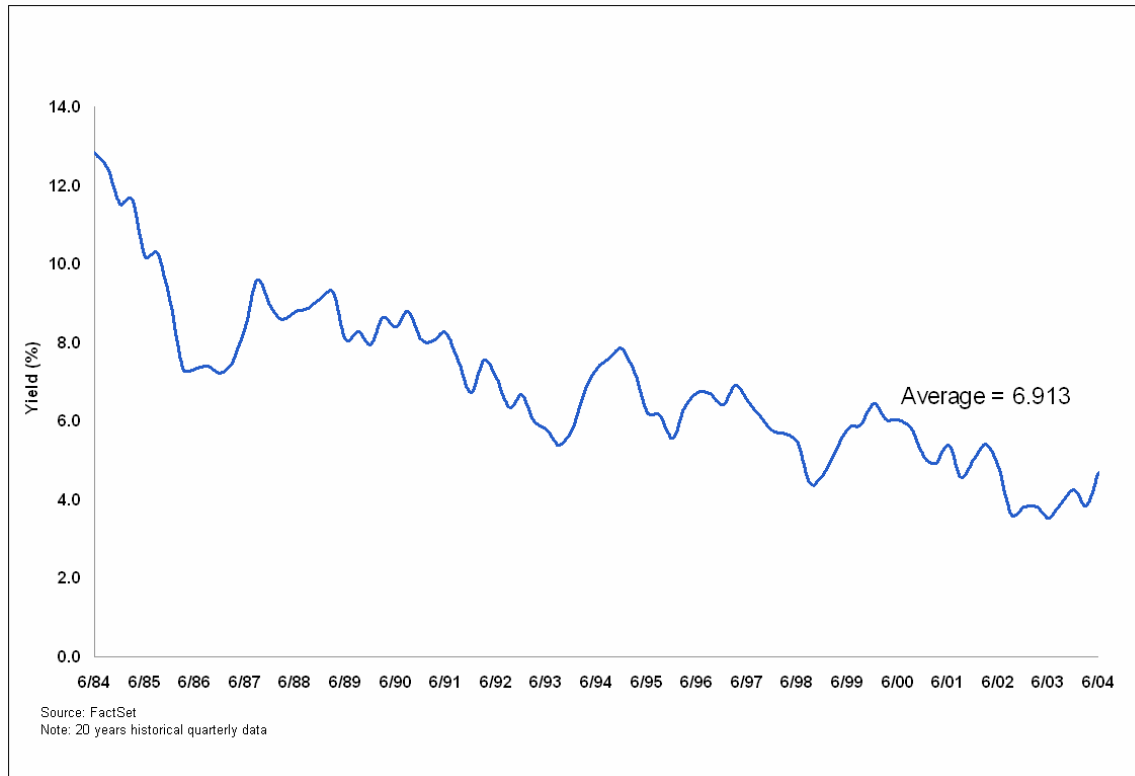
4   The U.S. Treasury rate is lower because the Federal Reserve has followed a very

5   aggressive easy money policy in order to stimulate the overall economy and produce

6   employment gains. Fortunately, employment gains have just begun to occur and

7   unfortunately recent data show an increase in the rate of inflation. The Federal

8   Reserve has responded by raising the federal funds rate target by 25 basis points in

9   late June 2004. Most economist believe that the Federal Reserve will continue to

10   increase interest rates, and, in fact, the Federal Reserve has stated that it expects

11   policy accommodation to be removed at a measured pace. It is therefore unlikely that

24

1   today's unprecedently low short-term interest rates (a 1¼ percent federal funds rate

2   target) will persist.

3

4   **Q.   HOW SHOULD THE COMMISSION RESPOND?   SHOULD IT SET A**

5   **RETURN ON EQUITY TARGET AT TODAY'S LOW RATE OR SHOULD IT**

6   **MAINTAIN THE RATES SET AT THE LAST HEARING?**

7   A.   I believe there are good reasons for the Commission to maintain the 12.45

8   percent rate of return on equity that it allowed in 2002. There are at least two

9   arguments that would support that position. First, as suggested above, today's interest

10   rate levels are unusually low. The real federal funds rate (the nominal rate less the

11   rate of inflation) is negative. Economists generally anticipate that the Federal

12   Reserve will continue raising interest rates in the future. As rates rise, required rates

13   of return for all assets are likely to rise. Thus, my minimum estimate of 10.5 percent

14   for the required rate of return on SCE&G's equity will rise as well. A more normal

15   required return on equity is higher than 10.5 percent.

16   There is a second reason why the Commission should give considerable weight

17   to the 12.45 percent allowed in 2002. SCE&G has made considerable investments

18   (such as the Jasper Plant) during earlier periods when required rates of return on

19   equity were higher. It is reasonable to allow the company to recover those costs at

20   return rates that more closely approximate the cost of capital during the development

21   of this new plant.

1   For both reasons, I believe the Commission should give considerable weight to

2   the 12.45 percent return on equity that it has in the past determined is appropriate and

3   that is more closely aligned with returns to be expected during more normal economic

4   times.

5

6 **Q.**   **DO YOU BELIEVE THAT A RANGE OF RATES OF RETURN IS**

7   **PREFERABLE TO A SINGLE POINT RETURN RATE? IF SO, PLEASE**

8   **EXPLAIN AND SHOW THE RANGE OF RATES OF RETURN YOU**

9   **BELIEVE TO BE FAIR AND REASONABLE FOR SCE&G.**

10 A.   I believe a range of returns is in fact preferable. Establishing a single point

11   for SCE&G's overall return can be done, but it is very unlikely that the company

12   will earn precisely at that level. More likely than not, the company will earn above

13   or below the point determined to be the fair rate of return, depending upon a host of

14   factors including general economic conditions, growth within the company's

15   service area, weather, and other unforeseen conditions. A good practice therefore

16   is to establish a range of reasonable returns using the range of equity capital costs

17   determined to be the most appropriate for the company.

18

1 **Q.** **CAN YOU THEN PROVIDE FOR THE COMMISSION A RANGE OF**

2 **REASONABLENESS FOR SCE&G's COST OF EQUITY CAPITAL?**

3 A. As indicated above, estimates of the cost of equity capital require the exercise

4 of judgment. Under today's conditions (which I consider abnormal because the whole

5 structure of returns is lower than normal because of policy responses to what until

6 recently has been called a "jobless recovery") a 10.5 percent required rate of return

7 could be justified. However, as indicated earlier, there are good reasons for the

8 Commission to maintain the 12.45 percent it has allowed under more normal interest

9 rate and economic environments. Thus, I would submit that a range of

10 reasonableness that most likely encompasses SCE&G's required equity rate of return

11 is shown in Table 6 below.

12 **Table 6**

Range of Reasonableness for SCE&G Cost of Equity Capital	
Top of Range	12.45%
Mid-Point	11.48%
Bottom of Range	10.50%

13

14 While I believe a range of returns is most appropriate and reasonable in

15 general, but particularly so for the unusual economic period which the U.S. economy

16 currently faces, if I were forced to make a point estimate for the most reasonable and

1 prudent return on common equity which SCE&G should be authorized to earn, I

2 would choose the mid-point of the range, which is approximately 11.5 percent.

3

4 **Q. WHAT IS THE COMPANY'S CAPITAL STRUCTURE?**

5 A.   SCE&G's pro forma capital structure as of September 30, 2004, is 50.76

6 percent common equity and 49.24 percent fixed rate senior securities. It is my

7 opinion that this capital structure is a reasonable one. In fact, highly leveraged capital

8 structures in today's market will likely limit a utility's ability to raise new capital, and

9 current debt levels (which are higher than desirable) need to be reduced. I believe

10 that SCE&G's capital structure of 50.76 percent equity and 49.24 percent debt

11 (including fixed rate preferred stock) to be prudent and to be within a reasonable zone

12 permitting it to raise new equity capital at market rates for the benefit of its customers

13 and shareholders.

14

15 **Q. WHAT IS THE COMPANY'S COST OF LONG-TERM DEBT?**

16 A.   As of June 30, 2004, SCE&G's weighted average embedded cost of long-term

17 debt is 6.55 percent. In my opinion, it is accepted practice to use the company's

18 embedded cost of debt in the calculation of overall return.

19

1   **Q.   BASED UPON THE COMPANY'S CAPITAL STRUCTURE, ITS COST OF**

2   **LONG-TERM DEBT, AND YOUR DETERMINATION OF A FAIR AND**

3   **REASONABLE COST OF EQUITY CAPITAL, WHAT IS A REASONABLE**

4   **OVERALL RATE OF RETURN FOR SCE&G?**

5   A.   Based upon the company's capital structure, its cost of long-term debt, and

6   my determination of a fair and reasonable cost of equity capital, a reasonable rate

7   of return (including consideration of flotation costs required to raise capital) for

8   SCE&G is shown in Table 7 below:

9   **Table 7**
10
11   Fair and Reasonable
12   Rate of Return
13

	Ratio	Cost	Overall Cost
Long-term Debt	49.24%	6.55%	3.23%
Common Equity	50.76%	11.48%	5.83%
Total	100.0%		9.06%

14

15 **Q.   CAN YOU PUT YOUR ESTIMATES OF THE COST OF CAPITAL FOR**

16   **SCE&G INTO A RANGE OF REASONABLENESS?**

17 A.   I have done so in Table 8 below.

1 **Table 8**

2 Range of Fair and Reasonable
3 Rates of Return

4
5 Low End of Range (with flotation costs)

6

	Ratio	Cost	Overall Cost
Long-term Debt	49.24%	6.55%	3.23%
Common Equity	50.76%	10.50%	5.33%
Total	100.0%		8.56%

7
8
9 Mid Point of Range (with flotation costs)

10

	Ratio	Cost	Overall Cost
Long-term Debt	49.24%	6.55%	3.23%
Common Equity	50.76%	11.48%	5.83%
Total	100.0%		9.06%

11
12
13 High End of Range (with flotation costs)

14

	Ratio	Cost	Overall Cost
Long-term Debt	49.24%	6.55%	3.23%
Common Equity	50.76%	12.45%	6.32%
Total	100.0%		9.55%

15

16 In summary, my determination of fair and reasonable rates of return for SCE&G,

17 using its actual capital structure, my estimates of the cost of equity capital and the

18 flotation costs associated with raising capital, range from a low of 8.56 percent to a

19 high of 9.55 percent.

20

30

1 **Q.** **YOU HAVE RECOMMENDED THAT THE COMMISSION ADOPT AN 11.5**

2 **PERCENT RATE OF RETURN ON EQUITY FOR SOUTH CAROLINA**

3 **ELECTRIC AND GAS. DO YOU HAVE ANY EVIDENCE THAT SUCH A**

4 **RATE OF RETURN IS CONSISTENT WITH REGULATORY DECISIONS**

5 **MADE IN OTHER JURISDICTIONS?**

6 A.   Yes, I do. On March 5, 2004, Lehman Brothers security analyst Daniel F.

7 Ford, CFA, authored a report entitled "They're Back! Twenty-Six Rate Cases This

8 Year Give Rise To Regulators." In that report, Mr. Ford performed a regression

9 analysis encompassing all rate decisions from the first quarter of 1980 through the

10 fourth quarter of 2003. In the regression analysis, the explanatory variable was the

11 10-year Treasury bond rate and the variable to be explained was the rate of return on

12 equity allowed by regulatory commissions. The regression included 1,113 regulatory

13 decisions. He found that the higher the 10-year Treasury bond rate, the higher the

14 allowed rate of return. The regression results were as follows:

15 Allowed Rate of Return on Equity = ½ (10-Year Treasury in basis points) + 870

16 $$R^2 = 78\%$$

17 The R^2 of 78% indicates that the fit of the regression was excellent and that most

18 of the differential in allowed rates of return were a function of the 10-year

19 Treasury rate.

31

1   If we use the Ford regression in the present circumstances, we obtain the

2   following result:

3   Allowed Rate of Return on Equity = ½ (480) + 870

4   Allowed Rate of Return on Equity = 1110 = 11.1%

5   Ford also showed that the spread over 10 year Treasuries tends to be higher

6   during low interest rate periods. For example, he finds that on average, the seventeen

7   2003 rate case decisions produced an allowed rate of return on equity that was 698

8   basis points over the 10-year Treasury. If we apply that figure of 698 basis points to

9   today's Treasury yield of approximately 4.8 percent, we get a rate of return of

10   approximately 11.8 percent as consistent with recent regulatory decisions. It is clear

11   then that my estimate of 11.5 percent is consistent with regulatory decisions in other

12   jurisdictions.

13

14 **Q.   THE COMPANY HAS REQUESTED AN 11.75 PERCENT RETURN ON**

15   **EQUITY. PLEASE COMMENT ON THE APPROPRIATENESS OF THAT**

16   **REQUEST.**

17 A.   An 11.75 percent rate of return on equity is well within my range of

18   reasonableness. Moreover, as I indicated in response to the previous question, the

19   calculations done by Lehman Brothers' analyst Daniel Ford suggest that an 11.8

20   percent rate of return is consistent with recent regulatory decisions. Estimating the

1   equity cost of capital can never be an exact science and an 11.75 percent rate of return

2   is certainly within the bounds of reasonableness.

3

4 **Q.**   **DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

5 A.   Yes.